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RESEARCH ARTICLE

Two genera of platygastroids (Hymenoptera: Platygastroidea) new to the Romanian fauna

Andreea Georgiana Spiridon[1], Mădălina Viciriuc[1], Cristina Vasilița[1], Alexandru Pintilioaie[1], Ovidiu Popovici[1]

1 *Research Group in Invertebrate Diversity and Phylogenetics, Faculty of Biology, "Alexandru Ioan Cuza" University of Iași, Romania*

Corresponding author: *Ovidiu Popovici* (popovici_alin_ovidiu@yahoo.com)

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Abstract

This study presents the genera *Iphitrachelus* Haliday, 1836 and *Baryconus* Förster, 1856 with the species *B. graeffei* (Kieffer, 1908), *I. lar* Haliday, 1836 and *I. gracilis* Masner, 1957 as new records for the Romanian fauna.

Keywords

B. graeffei, geographical distribution, *I. gracilis, I. lar*, new record.

Introduction

Platygastroidea is the third largest parasitic superfamily of Hymenoptera after Ichneumonoidea and Chalcidoidea. Presently, almost 6000 species of Platygastroidea are described all around the world (various contributors 2019). They can be found in all habitats except for the polar regions and are prolific in the wet forests of the tropics and subtropics (Austin et al. 2005). This group of parasitoid wasps is relatively poorly studied, in spite of its potential economic use as important agents in biological control. Almost every genus is in need of review and a lot of species have to be reconsidered taking into account the intraspecific variability; sometimes there is a close correlation between the intraspecific variability and the geographical dis-

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tribution. A good example is the genus *Trissolcus* Ashmead, 1893 recently reviewed by Talamas et al. (2017). From 23 species of *Trissolcus* included in the study, Talamas et al. (2017) recognize only 14. This is probably not an exception, the same authors (Talamas et al. 2017) considered that at least two of the most speciose genera of Platygastroidea – *Telenomus* Haliday, 1833 and *Platygaster* Latreille, 1809 – must be in the same situation. On the contrary, some genera that have been considered until recently as small ones with only a few species, or even monotypic, have been proven to be more speciose than the most optimistic predictions, when more material was collected and became available. For example *Helava* Masner and Huggert, 1989 was described as a monotypic genus. However, Talamas and Masner (2016) described 9 new species of this genus. Prior to 2011, the genus *Trichoteleia* Kieffer, 1910 was known as a small genus with only two species. Examination of new material from Madagascar and adjacent islands, led to description of 40 new species from this genus (Talamas et al. 2011). News like this come as a surprise not only about the taxonomy of a group, but also regarding the distribution. This subject is well documented in Popovici et al. (2018), but new facts are often revealed. This study fits in this direction, it aims to bring new data concerning the geographical distribution of *Baryconus* Förster, 1856 and *Iphitrachelus* Haliday, 1836. At the present level of knowledge, we are far from knowing the real distribution of the genera of Platygastroidea in Europe and we know very little (with few exceptions) concerning the species of this superfamily.

Baryconus and *Iphitrachelus* are two relatively easy distinguishable genera of Platygastroidea, the first one because of the presence of a deep depression on the frons that is margined by a complete carina, and spines at the posterolateral corners of the terminal metasomal tergite, and the latter due to its peculiar antenna, the 4-tarsomere legs and the broad scutoscutellar sulcus.

Material and methods

The specimens were collected using a triangular sweep net as described in Noyes (1982). Additionally, the frame of this net has a wire mesh screen across the net opening (Popovici et al. 2018). The specimens were mounted on triangular points and identified using a Leica S6 stereomicroscope. The pictures were taken using a DFC-500 camera on a Leica 205A stereomicroscope.

Results

A. *Baryconus* Förster, 1856

This genus is very distinct among the genera of Palaearctic fauna of Scelionidae and it is difficult to be misidentified. In the Palaearctic fauna, confusion can be made

by an inexperienced student only between *Baryconus*, *Apegus* Förster, 1856 and *Amblyscelio* Kieffer, 1913, although *Baryconus* is easily separable from these genera because of the deep frontal depression bordered by a complete carina, and because the vertex is cut off posteriorly, adjoining occiput abruptly (Masner 1976). Often the apex of metasoma in *Baryconus* is armed with two spikes (sometimes not, e.g. the female of *B. graeffei* (Kieffer, 1908)).

Baryconus graeffei (Fig. 1A) – this species is well described and illustrated in Popovici et al. (2013). The specimens recorded from Romania do not have any elements of variability to help us complete the diagnosis or the description of Popovici et al. (2013) and therefore, there is no reason to re-describe this species herein.

Material examined: 1♀ România: Constanța, Dumbrăveni forest, 30.vii.2017, 43.93387°N, 28.00579°E, alt. 132 m, sweep net (border of the forest, in trees, *Quercus* sp.), leg. Popovici O. & Fusu L.; 5♂ România: Tulcea, Babadag forest, 30.vii.2017, 44.813808°N, 28.706625°E, alt. 121 m, sweep net (in forest, in trees, *Quercus* sp.), leg. Popovici O. & Fusu L.

B. *Iphitrachelus* Haliday, 1836

It is a very peculiar and easily recognizable genus among the genera of Palaearctic fauna of Platygastridae. In the Palaearctic fauna, the females of this genus are almost impossible to be misidentified, but in the case of males, they can be confused by a novice with the males of *Allotropa* Förster, 1856. The genus is well described and discussed in Masner and Huggert (1989), so there is no reason to re-describe it. Among the three Palaearctic species of *Iphitrachelus* (*I. lar* Haliday, 1836, *I. gracilis* Masner, 1957 and *I. koreensis* Megyaszai, 1999) in Romania we have found only two – *I. lar* and *I. gracilis*. The Romanian species of *Iphitrachelus* are distinct and can be easily separated from each other, using the following papers: Masner 1957, 1958, 1976; Jackson 1966; Huggert 1976; Kozlov 1978; Buhl 1999; Megyaszai 1999. Therefore it is not necessary to re-describe or key the Romanian species of *Iphitrachelus*.

Iphitrachelus gracilis Masner, 1957 (Fig. 1B)

Material examined: 1♀ România: Iași, Botanical Garden, 30.vi.2006, net & aspirator, leg. Popovici O.

Iphitrachelus lar Haliday, 1836 (Fig. 1C)

Material examined: 1♀ România: Iași, Botanical Garden, 30.vi.2011, 47.1875°N, 27.5488°E, sweep net, leg. Noyes J.

Discussion

The occurrence of *Baryconus* and *Iphitrachelus* in Romania was anticipated. The distribution of the European species of *Baryconus* was mapped in Popovici et al. (2013). *Baryconus europaeus* (Kieffer, 1908) was recorded from the Republic of Moldova (Gîrneț 2012) and *B. graeffei* from Bulgaria (Kononova and Kozlov 2008),

countries adjacent to Romania. Although from Romania we recorded only *B. graeffei*, the presence of *B. europaeus* is also expected. We believe that *Baryconus* is not rare in Romania, nonetheless, it was not recorded until now because of its biol-

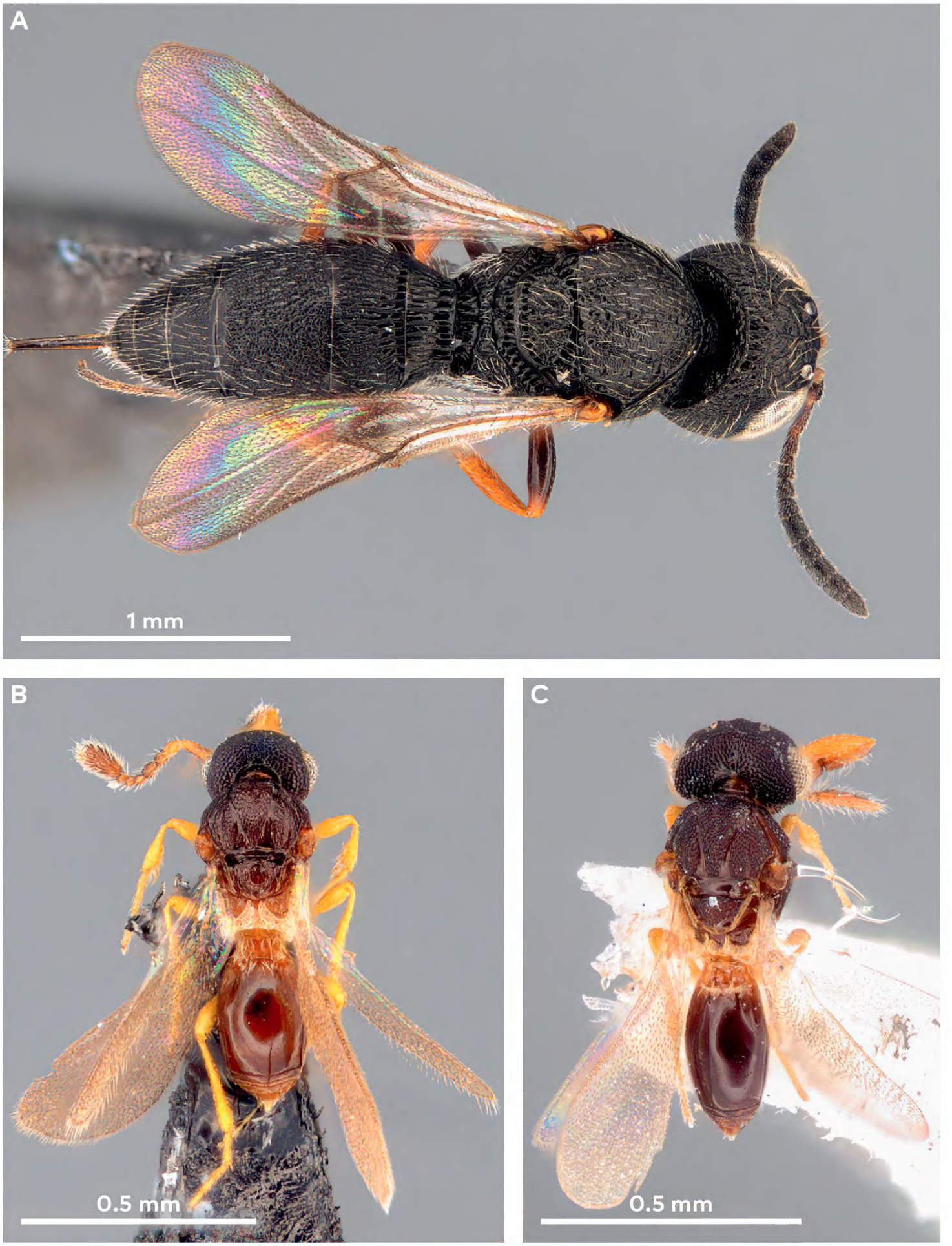

Figure 1. A. *Baryconus graeffei*, female; B. *Iphitrachelus gracilis*, female; C. *Iphitrachelus lar*, female.

ogy, species of this genus seem to be mostly arboreal, recurring in trees and shrubs. Bin (1976) reared three species of *Baryconus* in Europe emerging from the eggs of *Phaneroptera* spp. (Orthoptera: Tettigoniidae) laid in between two faces of a leaf of an unidentified tree. This could explain the abundance of *Baryconus* specimens in Malaise traps compared to pan traps or anywhere near the ground (Ritchie and Masner 1983). The Romanian specimens of *Baryconus* were obtained by sweeping in the trees (*Quercus* spp.) and shrubs, supporting the idea that this genus is mostly arboreal. By sweeping in the exactly same area, but under the trees and near the shrubs, no specimen of *Baryconus* was caught. For the moment, the Romanian distribution of *Baryconus* appears to be restricted to Dobrogea only, but further studies might reveal a wider distribution of this genus in Romania. *B. graeffei* has been previously reported from Italy, Bulgaria (Kieffer 1908, 1926; Kononova and Kozlov 2008), France, Greece, Montenegro, and Turkey (Popovici et al. 2013), being considered a western Palaearctic species with a Mediterranean distribution (Popovici et al. 2013). For now, the Babadag forest is the most north-eastern point of distribution for *B. graeffei*.

Iphitrachelus is regarded as a cosmopolitan genus (Buhl 2011). Little is known about the ecology of the genus. Jansson (1939) reports a capture of this genus by sweeping on vegetation, namely *Trifolium medium* and *Veronica chamaedrys* in a forest south from Örebro (Sweden). It appears that *Iphitrachelus* has a preference for shady and moist places (Debauche 1947). Masner (1957) reports that an *I. lar* male has been swept on moist, shady vegetation on the valley of a mountain-brook in community with *I. gracilis,* and a female has been swept on the rich vegetation of a mountain meadow. *Iphitrachelus lar* was originally described by Haliday from Scotland (Walker 1836) and later recorded from Ireland (Walker 1851), Germany (Förster 1856), England (Marshall 1873), Sweden (Jansson 1939), Belgium (Debauche 1947), Slovakia (Masner 1957), Republic of Moldova (Kozlov 1978), Denmark, Finland, Norway, Sweden (Buhl 1999) and Latvia (Buhl 2016). Buhl (2011) considers *I. lar* a worldwide species.

Iphitrachelus gracilis was originally described from Slovakia by Masner (1957) and later recorded from Sweden (Masner 1958), Czech Republic (Masner 1965), Denmark, Sweden, Finland, Norway (Buhl 1999), England (Buhl and Notton 2009) and Latvia (Buhl 2016).

In Romania, in 17 years of collecting, we managed to capture only two specimens of *Iphitrachelus*. This might be explained by the rare occurrence of this genus in Romania, or by the fact that we still do not understand its ecological preferences; therefore, we were unable to collect samples in the proper habitats for this genus. *Iphitrachelus lar* and *I. gracilis* are sympatric in Romania, as it also happens to be in the Czech Republic. Buhl (*personal communication*) considers that in Scandinavia, *I. gracilis* is less common than *I. lar*. He found these two species sometimes in sympatry, but most often not.

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